

REMARKS

Claims 1-3 and 7-10 are all the claims pending in the application. With this amendment Applicants cancel claims 4 and 6.

I. Claim Rejections - 35 USC § 102

The Examiner rejected claims 1-3, 6-8, and 10 under 35 U.S.C. § 102 (b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sullivan et al. (US 5,803,831) ["Sullivan"]. For at least the following reasons, Applicants traverse the rejection.

The effects of a multi-piece solid golf ball of the present invention is that the ball travels an increased distance upon full shots with a driver by optimizing the combination of the intermediate layer gage with the cover gage, together with the other following subject-matter.

Claim 1, as amended, recites

(i) A multi-piece solid golf ball which is a three piece solid golf ball consisting of a solid core, an intermediate layer enclosing the solid core, and a cover enclosing the intermediate layer, wherein .

(ii) said intermediate layer has a gage G_1 of 0.8 to 1.5 mm and a Shore D hardness of 53 to 65,

(iii) said cover has a gage G_2 of 0.5 to 1.3 mm and a Shore D hardness of 37 to 50 and

(iv) [the cover] is formed of an urethane resin having a melt index of at least 3.0 dg/min at 190°C, and

(v) the gage G_1 of said intermediate layer and gage G_2 of said cover satisfy
 $[G_1/(G_1+G_2)] \times 100 \geq 45\%$.

Applicants submit that Sullivan does not disclose at least the following features of the present invention.

With respect to subject-matter (iv) as recited in claim 1, Sullivan does not disclose an urethane resin having a melt index of at least 3.0 dg/min at 190°C. Specifying the melt index is an important factor for enhancing the flowability of the thermoplastic resin material in molding when a thin cover (0.5 to 1.3 mm) is formed by the resin material. If a resin material has a lower melt index, it will be less flowable and thus, it would be difficult to mold a thin uniform cover. If the cover cannot be formed uniformly, advantageous characteristics of the combination of the intermediate layer gage with the cover gage in the present invention is lost and the ball cannot travel an increased distance upon full shots with a driver. Thus, specifying the melt index in the present invention influences the inventive effects and is, therefore, patentable.

Sullivan uses ionomer resins as the cover material (see claim 1 of Sullivan) and fails to disclose and teach the significance of the melt index of an urethane resin used in the present invention and the effects thereof.

In addition, Sullivan does not disclose or suggest the claimed relationship between the intermediate layer gage G_1 and the cover gage G_2 ($[G_1/(G_1+G_2)] \times 100 \geq 45\%$). The Examiner, concedes that Sullivan does not disclose the claimed relationship, but asserts that by selectively picking values from Sullivan's broad ranges, this feature can be satisfied because Sullivan allegedly discloses an inner cover layer (14) with a thickness of 0.01-0.1 inch (0.254-2.54 mm) and an outer cover layer (16) with a thickness of 0.01-0.1 inch (0.254-2.54 mm).

Applicants submit that the description merely suggests the general range of the gage of the cover layers. In contrast, the claimed intermediate layer and the claimed cover are each defined by a Shore D hardness range and a gage range (see the subject-matter recited in (ii) and (iii) above) which provide advantageous characteristics to the intermediate layer and the cover layer. In addition, the gage G_1 of the intermediate layer and the gage G_2 of the cover are further defined by the relationship, $[G_1/(G_1+G_2)] \times 100 \geq 45\%$, in order to achieve the inventive objects of the present invention. Thus, Applicants submit that the gage as defined by the concepts of the present invention differ from those of Sullivan.

Therefore, claim 1 is patentable because Sullivan does not disclose or suggest at least the above features. Accordingly, these features are also not obvious since Sullivan does not provide any teachings or suggestion for including at least these features.

Because claims 2, 3, 7, 8 and 10 depend on claim 1, Applicants submit that these claims are patentable at least by virtue of their dependency.

Applicants have canceled claims 4 and 6.

II. Claim Rejections - 35 USC § 103

The Examiner rejected claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Sullivan in view of Shimosaka et al. (US 5,816,937) [“Shimosaka”]. For at least the following reasons, Applicants traverse the rejection.

The Examiner concedes that Sullivan fails to disclose the claimed “intermediate layer [having] a Shore D hardness of 56 to 58”, but applies Shimosaka to allegedly cure the deficiency.

The solid golf ball of Sullivan has the three piece construction (see Fig. 2) consisting of a core 10, an inner layer 14 and an outer layer 16, whereas the golf ball of Simosaka has the four piece construction having an innermost layer 3 enclosing the core 1 (solid or liquid), an intermediate layer 4 and the outermost layer 5 (see Fig.3 of Simosaka). The cover disclosed in Simosaka has a so-called sandwich construction in hardness distribution wherein the intermediate layer 4 having highest Shore D hardness (not less than 55) is positioned between the innermost layer 3 having lower Shore D hardness (less than 55) and the outermost layer 5 having lower hardness Shore hardness (less than 55). The cover having the sandwich construction disclosed in Shimosaka is far from the golf ball disclosed in Sullivan. Thus, Applicants submit that there is a fundamental difference the ball structures and one skilled in the art would not have combined the references as suggested by the Examiner.

In addition, even if, for the sake of argument alone, the references were combined, the combined teachings would still fail to teach at least subject matter in (v) above. Simosaka does not disclose or suggest the claimed relationship between the intermediate layer and the cover ($[G_1/(G_1+G_2)] \times 100 \geq 45\%$) because Shimosaka has three covers and, therefore, cannot disclose the concept of optimizing the combination of the claimed intermediate layer gage G_1 with the claimed cover gage G_2 as set forth in claim 9 (based on its dependency to claim 1).

Accordingly, Applicants submit that Sullivan and Simosaka (alone or in combination) do not disclose or suggest at least this feature.

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Respectfully submitted,

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